NOV 0 6 2000 30 100

SEQUENCE LISTING

<110> A pra Biosciences Corporation

Zucker Maarles Mendlein, John Sun, Yumei Tsunoda, Susan Sierralta, Jimena

<120> Compositions And Methods For Identifying Modulators and Transducisomes

<130> AURO1210-1

<140> 09/462,517

<141> 2000-05-18

<160> 16

<170> PatentIn version 3.0

<210> 1

<211> 674

<212> PRT

<213> Drosophila melanogaster

<400> 1

Met Val Gln Phe Leu Gly Lys Gln Gly Thr Ala Gly Glu Leu Ile His 1 5 10 15

Met Val Thr Leu Asp Lys Thr Gly Lys Lys Ser Phe Gly Ile Cys Ile 20 25 30

Val Arg Gly Glu Val Lys Asp Ser Pro Asn Thr Lys Thr Thr Gly Ile 35 40 45

Phe Ile Lys Gly Ile Val Pro Asp Ser Pro Ala His Leu Cys Gly Arg
50 55 60

Leu Lys Val Gly Asp Arg Ile Leu Ser Leu Asn Gly Lys Asp Val Arg 65 70 75 80

Asn Ser Thr Glu Gln Ala Val Ile Asp Leu Ile Lys Glu Ala Asp Phe 85 90 95

Lys Ile Glu Leu Glu Ile Gln Thr Phe Asp Lys Ser Asp Glu Gln Gln
100 105 110

Ala Lys Ser Asp Pro Arg Ser Asn Gly Tyr Met Gln Ala Lys Asn Lys 115 120 125

Phe Asn Gln Glu Gln Thr Thr Asn Asn Asn Ala Ser Gly Gln Gly
130 135 140

Met Gly Gln Gly Gln Gly Gln Gly Met Ala Gly Met Asn Arg 145 150 155 160

Gln Gln Ser Met Gln Lys Arg Asn Thr Thr Phe Thr Ala Ser Met Arg 165 170 175

Gln Lys His Ser Asn Tyr Ala Asp Glu Asp Asp Glu Asp Thr Arg Asp 180 185 190

Met Thr Gly Arg Ile Arg Thr Glu Ala Gly Tyr Glu Ile Asp Arg Ala 195 200 205

Ser Ala Gly Asn Cys Lys Leu Asn Lys Gln Glu Lys Asp Arg Asp Lys Glu Gln Glu Asp Glu Phe Gly Tyr Thr Met Ala Lys Ile Asn Lys Arg Tyr Asn Met Met Lys Asp Leu Arg Arg Ile Glu Val Gln Arg Asp Ala 250 Ser Lys Pro Leu Gly Leu Ala Leu Ala Gly His Lys Asp Arg Gln Lys Met Ala Cys Phe Val Ala Gly Val Asp Pro Asn Gly Ala Leu Gly Ser Val Asp Ile Lys Pro Gly Asp Glu Ile Val Glu Val Asn Gly Asn Val Leu Lys Asn Arg Cys His Leu Asn Ala Ser Ala Val Phe Lys Asn Val Asp Gly Asp Lys Leu Val Met Ile Thr Ser Arg Arg Lys Pro Asn Asp 330 Glu Gly Met Cys Val Lys Pro Ile Lys Lys Phe Pro Thr Ala Ser Asp Glu Thr Lys Phe Ile Phe Asp Gln Phe Pro Lys Ala Arg Thr Val Gln 360 Val Arg Lys Glu Gly Phe Leu Gly Ile Met Val Ile Tyr Gly Lys His Ala Glu Val Gly Ser Gly Ile Phe Ile Ser Asp Leu Arg Glu Gly Ser Asn Ala Glu Leu Ala Gly Val Lys Val Gly Asp Met Leu Leu Ala Val 410 Asn Gln Asp Val Thr Leu Glu Ser Asn Tyr Asp Asp Ala Thr Gly Leu Leu Lys Arg Ala Glu Gly Val Val Thr Met Ile Leu Leu Thr Leu Lys 440 Ser Glu Glu Ala Ile Lys Ala Glu Lys Ala Ala Glu Glu Lys Lys Glu Glu Ala Lys Lys Glu Glu Glu Lys Pro Gln Glu Pro Ala Thr Ala Glu Ile Lys Pro Asn Lys Lys Ile Leu Ile Glu Leu Lys Val Glu Lys Lys Pro Met Gly Cys His Arg Leu Arg Arg Gln Lys Gln Pro Cys His Asp Trp Leu Cys Asn His Pro Arg Leu Ser Gly Gly Gln Val Ala Ala 520 Asp Lys Arg Leu Lys Ile Phe Asp His Ile Cys Asp Ile Asn Gly Thr Pro Ile His Val Gly Ser Met Thr Thr Leu Lys Val His Gln Leu Phe 545 550 555 560

His Thr Thr Tyr Glu Lys Ala Val Thr Leu Thr Val Phe Arg Ala Asp 565 570 575

Pro Pro Glu Leu Glu Lys Phe Asn Val Asp Leu Met Lys Lys Ala Gly 580 585 590

Lys Glu Leu Gly Leu Ser Leu Ser Pro Asn Glu Ile Gly Cys Thr Ile
595 600 605

Ala Asp Leu Ile Gln Gly Gln Tyr Pro Glu Ile Asp Ser Lys Leu Gln 610 620

Arg Gly Asp Ile Ile Thr Lys Phe Asn Gly Asp Ala Leu Glu Gly Leu 625 630 635 640

Pro Phe Gln Val Cys Tyr Ala Leu Phe Lys Gly Ala Asn Gly Lys Val 645 650 655

Ser Met Glu Val Thr Arg Pro Lys Pro Thr Leu Arg Thr Glu Ala Pro 660 665 670

Lys Ala

<210> 2

<211> 2059

<212> DNA

<213> Drosophila melanogaster

<400> 2

atggttcagt tcctgggcaa acagggcacc gcgggtgagc tcattcacat ggtgaccctg 60 120 gacaagacgg gcaagaagtc cttcggcatc tgcatagtgc gcggcgaggt gaaggattcg 180 cccaacacca agacaaccgg catcttcatc aagggcattg tgcccgacag tcccgcgcat ctgtgtggtc gcctaaaggt tggcgatcgg atcctctcgc tcaacggaaa ggatgtgcgc 240 aactccaccg aacaggcggt catcgatctc atcaaggagg cggacttcaa gatcgagctg 300 360 gagattcaga ccttcgacaa gagcgatgag cagcaggcca agtcagatcc gcggagcaat ggctacatgc aggccaagaa caagttcaat caggagcaga ccaccaacaa caatgcgtcc 420 480 ggaggtcagg gaatggggca aggtcagggt cagggtcagg gaatggctgg catgaaccgg 540 caqcaatcqa tqcaqaaqcq gaataccaca ttcacggcct cgatgcgtca gaagcatagt 600 aactacgccg acgaggatga cgaggacacc cgggacatga ccggtcgcat tcgcacggag 660 gegggttatg agategateg agecteegee ggtaattgca aacttaataa geaggaaaag 720 qatcqcqaca aqqaqcaqqa agatgaattt ggctacacga tggctaagat caacaagcgg tacaacatga tgaaggatct gcgcaggatc gaggtccaga gggacgccag caagccactg 780 840 ggactegeae tegetggeea caaggacege cagaagatgg cetgetttgt tgeeggtgtg 900 gatcccaacg gagcattggg cagcgtggac attaagccgg gcgacgagat cgtcgaggtc 960 aacggcaatg tgcttaagaa tcgctgccac ttgaacgcct ccgccgtgtt caagagcgtg 1020 gatggggata agctcgtgat gatcacctcg cgacgcaagc ccaacgatga gggcatgtgc

gtcaagccca tcaaaaagtt ccccaccgcg tctgatgaga ctaagtttat cttcgaccag 1080 tttcccaagg cgcgcacggt gcaggtgcgc aaggagggtt cctgggcatc atggtcatct 1140 atggcaagca cgctgaggtg ggcagtggca ttttcatctc ggatctgaga gagggatcga 1200 atgccgagtt ggcgggcgtg aaagtgggcg acatgctgct ggccgttaat caggatgtaa 1260 1320 cactggaatc caactacgat gatgctactg gactgcttaa acgtgccgag ggcgtagtga 1380 ccatgattct attgactctc aagagcgagg aggcgataaa ggctgagaag gcagcggaag agaaaaagaa ggaggaggcc aagaaagagg aggaaaagcc acaggaaccc gccacagccg 1440 agatcaagcc gaacaaaaag atactcattg agttgaaggt ggaaaagaag ccaatgggcg 1500 1560 tcatcgtctg cggcggcaag aacaaccatg tcacgactgg ctgtgtaatc acccacgttt atccggaggg acaagtggca gccgacaagc gcctcaagat ctttgaccac atttgtgata 1620 taaatggtac gccaatccac gtgggatcca tgacgacact gaaggtccat cagttattcc 1680 1740 acaccacata cgagaaggcg gtcaccctaa cggtcttccg cgctgatcct ccggaactgg 1800 aaaagtttaa cgttgacctt atgaaaaaag caggcaagga gctgggcctg tcgctgtctc 1860 ccaacgaaat tggatgcacc atcgcggact tgattcaagg acaatacccg gagattgaca gcaaactgca gcgcggcgat attatcacca attcaatggc gatgccttgg agggtcttcc 1920 1980 gttccaggtg tgctacgcct tgttcaaggg agccaacggc aaggtatcga tggaagtgac 2040 acgacccaag cccactctac gtacggaggc acccaaggcc tagagacgat cctcattctc 2059 ctctccgtag cgaagcagt

```
<210> 3
```

<220>

<223> PSD-1

<400> 3

Met Glu Tyr Glu Glu Ile Thr Leu Glu Arg Gly Asn Ser Gly Leu Gly 1 5 10 15

Phe Ser Ile Ala Gly Gly Thr Asp Asn Pro His Ile Gly Asp Asp Pro
20 25 30

Ser Ile Phe Ile Thr Lys Ile Ile Pro Gly Gly Ala Ala Ala Gln Asp 35 40 45

Gly Arg Leu Arg Val Asn Asp Ser Ile Leu Phe Val Asn Glu Val Asp 50 60

Val Arg Glu Val Thr His Ser Ala Ala Val Glu Ala Leu Lys Glu Ala 65 70 75 80

Gly Ser Ile Val Arg Leu Tyr Val Met Arg Arg Lys Pro

<211> 93

<212> PRT

<213> artificial

```
<210> 4
<211> 93
<212> PRT
<213> Artificial
<220>
<223>
      PSD95-2
<400> 4
Glu Lys Val Met Glu Ile Lys Leu Ile Lys Gly Pro Lys Gly Leu Gly
Phe Ser Ile Ala Gly Gly Val Gly Asn Gln His Ile Pro Gly Asp Asn
Ser Ile Tyr Val Thr Lys Ile Ile Glu Gly Gly Ala Ala His Lys Asp
Gly Arg Leu Gln Ile Gly Asp Lys Ile Leu Ala Val Asn Ser Val Gly
Leu Glu Asp Val Met His Glu Asp Ala Val Ala Ala Leu Lys Asn Thr
Tyr Asp Val Val Tyr Leu Lys Val Ala Lys Pro Ser Asn
<210> 5
<211> 87
<212> PRT
<213> artificial
<220>
     PSD95-3
<223>
<400> 5
Arg Glu Pro Arg Arg Ile Val Ile His Arg Gly Ser Thr Gly Leu Gly
Phe Asn Ile Val Gly Gly Glu Asp Gly Glu Gly Ile Phe Ile Ser Phe
Ile Leu Ala Gly Gly Pro Ala Asp Leu Ser Gly Glu Leu Arg Lys Gly
Asp Gln Ile Leu Ser Val Asn Gly Val Asp Leu Arg Asn Ala Ser His
Glu Gln Ala Ala Ile Ala Leu Lys Asn Ala Gly Gln Thr Val Thr Ile
Ile Ala Gln Tyr Lys Pro Glu
<210>
       6
<211>
       87
<212>
       PRT
<213> artificial
<220>
```

<223> dlg-3

<400> 6 Arg Glu Pro Arg Thr Ile Thr Ile Gln Lys Gly Pro Gln Gly Leu Gly Phe Asn Ile Val Gly Glu Asp Gly Gln Gly Ile Tyr Val Ser Phe Ile Leu Ala Gly Gly Pro Ala Asp Leu Gly Ser Glu Leu Lys Arg Gly Asp Gln Leu Leu Ser Val Asn Asn Val Asn Leu Thr His Ala Thr His Glu Glu Ala Ala Gln Ala Leu Lys Thr Ser Gly Gly Val Val Thr Leu Leu Ala Gln Tyr Arg Pro Glu 85 <210> 7 <211> 88 <212> PRT artificial <213> <220> <223> nNOS <400> 7 Pro Asn Val Ile Ser Val Arg Leu Phe Lys Arg Lys Val Gly Gly Leu Gly Phe Leu Val Lys Glu Arg Val Ser Lys Pro Pro Val Ile Ile Ser Asp Leu Ile Arg Gly Gly Ala Ala Glu Gln Ser Gly Leu Ile Gln Ala Gly Asp Ile Ile Leu Ala Val Asn Asp Arg Pro Leu Val Asp Leu Ser Tyr Asp Ser Ala Leu Glu Val Leu Arg Gly Ile Ala Ser Glu Thr His Val Val Leu Ile Leu Arg Gly Pro 85 <210> 8 <211> 88 <212> PRT <213> artificial <220> inaD-3 <223> · <400> 8 Pro Lys Ala Arg Thr Val Gln Val Arg Lys Glu Gly Phe Leu Gly Ile

Ser Asp Leu Arg Glu Gly Ser Asn Ala Glu Leu Ala Gly Val Lys Val

Met Val Ile Tyr Gly Lys His Ala Glu Val Gly Ser Gly Ile Phe Ile

35 40 45

Gly Asp Met Leu Leu Ala Val Asn Gln Asp Val Thr Leu Glu Ser Asn 50 60

Tyr Asp Asp Ala Thr Gly Leu Leu Lys Arg Ala Glu Gly Val Val Thr 65 70 75 80

Met Ile Leu Leu Thr Leu Lys Ser 85

<210> 9

<211> 95

<212> PRT

<213> artificial

<220>

<223> inaD-1

<400> 9

Glu Leu Ile His Met Val Thr Leu Asp Lys Thr Gly Lys Lys Ser Phe 1 5 10 15

Gly Ile Cys Ile Val Arg Gly Glu Val Lys Asp Ser Pro Asn Thr Lys
20 25 30

Thr Thr Gly Ile Phe Ile Lys Gly Ile Val Pro Asp Ser Pro Ala His 35 40 45

Leu Cys Gly Arg Leu Lys Val Gly Asp Arg Ile Leu Ser Leu Asn Gly 50 60

Lys Asp Val Arg Asn Ser Thr Glu Gln Ala Val Ile Asp Leu Ile Lys 65 70 75 80

Glu Ala Asp Phe Lys Ile Glu Leu Glu Ile Gln Thr Phe Asp Lys 85 90 95

<210> 10

<211> 86

<212> PRT

<213> artificial

<220>

<223> inaD-5

<400> 10

Leu Glu Lys Phe Asn Val Asp Leu Met Lys Lys Ala Gly Lys Glu Leu 1 5 10 15

Gly Leu Ser Leu Ser Pro Asn Glu Ile Gly Cys Thr Ile Ala Asp Leu 20 25 30

Ile Gln Gly Gln Tyr Pro Glu Ile Asp Ser Lys Leu Gln Arg Gly Asp 35 40 45

Ile Ile Thr Lys Phe Asn Gly Asp Ala Leu Glu Gly Leu Pro Phe Gln 50 55 60

Val Cys Tyr Ala Leu Phe Lys Gly Ala Asn Gly Lys Val Ser Met Glu 65 70 75 80

Val Thr Arg Pro Lys Pro

```
<210> 11
<211>
       89
<212>
       PRT
       artificial
<213>
<220>
<223>
       inaD-2
<400>
       11
Lys Asp Leu Arg Arg Ile Glu Val Gln Arg Asp Ala Ser Lys Pro Leu
Gly Leu Ala Leu Ala Gly His Lys Asp Arg Gln Lys Met Ala Cys Phe
Val Ala Gly Val Asp Pro Asn Gly Ala Leu Gly Ser Val Asp Ile Lys
Pro Gly Asp Glu Ile Val Glu Val Asn Gly Asn Val Leu Lys Asn Arg
Cys His Leu Asn Ala Ser Ala Val Phe Lys Ser Val Asp Gly Asp Lys
Leu Val Met Ile Thr Ser Arg Arg Lys
                 85
<210>
       12
<211>
       80
<212>
       PRT
       artificial
<213>
<220>
<223>
       inaD-4
<400>
Pro Met Gly Val Ile Val Cys Gly Gly Lys Asn Asn His Val Thr Thr
                                     10
Gly Cys Val Ile Thr His Val Tyr Pro Glu Gly Gln Val Ala Ala Asp
Lys Arg Leu Lys Ile Phe Asp His Ile Cys Asp Ile Asn Gly Thr Pro
Ile His Val Gly Ser Met Thr Thr Leu Lys Val His Gln Leu Phe His
Thr Thr Tyr Glu Lys Ala Val Thr Leu Thr Val Phe Arg Ala Asp Pro
                     70
<210>
       13
<211>
       5
<212>
       PRT
       artificial
<213>
```

import locolization sequence targeting nucleus

<400> 13

<220>

<223>

```
Lys Lys Lys Arg Lys
<210> 14
<211>
      26
<212>
      PRT
<213>
      artificial
<220>
      import locolization sequence targeting mitochondrion
<223>
<400> 14
Met Leu Arg Thr Ser Ser Leu Phe Thr Arg Arg Val Gln Pro Ser Leu
Phe Arg Asn Ile Leu Arg Leu Gln Ser Thr
           20
<210>
      15
<211> 4
<212> PRT
<213> artificial
<220>
      import locolization sequence targeting endoplasmic reticulum
<223>
<400>
      15
Lys Asp Glu Leu
<210> 16
<211> 4
<212> PRT
<213>
      artificial
<220>
<223>
      insertion into plasma membrane
<220>
<221> VARIANT
<222>
      (1)..(4)
<223> x = any amino acid
<400> 16
Cys Cys Xaa Xaa
```